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ABSTRACT

This study was conducted in the radiologic technology department of East Tennessee State University to determine if existing criteria and procedures accurately predict an applicant's potential for the successful completion of program requirements. The 70 students admitted to the program were ranked utilizing standardized evaluation methodology (academic record and interview). Twenty-seven percent of the sample population did not complete the program. Two tailed t-tests were utilized to compare data between the academic and interview ranks of those students completing the program and those who did not. Academic ranking proved statistically significant. The interview process was not a significant indicator even though a standardized interview form was utilized. The academic rating form and interview form are appended. (Contains 10 references.) (DB)

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ED 382 140

Admission Significance Parameters of the Radiologic Technology Program

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Running head: Admission Parameters

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Abstract

This study was conducted in the radiologic technology department of East Tennessee State University to determine if existing criteria and procedures accurately predicted an applicant's potential for the successful completion of program requirements. The 70 students admitted to the program were ranked utilizing standardized evaluation methodology (academic and interview). Two tailed t-tests were utilized to analyze data between the academic and interview ranks of those students completing the program and those who did not. Academic ranking proved statistically significant, (t value = 1.28, df = 68, p = .20) and the interview ranking was not significant, (t value = .28, p = .78). Additional studies should be conducted to ascertain if other parameters, such as previous course work, are significant. A holistic study is also recommended to incorporate different institutions in order to substantiate results.

American institutions of higher education have experienced many changes since they were first established. Movement of American society from an agrarian to an industrial society caused corresponding changes in enrollment patterns in institutions of higher education. The focus of many institutions had already changed from liberal arts programs available only for the elite members of society to occupational programs which provided adequate training to fill new jobs created by the demands of a highly competitive industrial and technological economy. More recent changes in the economy created a shift from industrial and technologically based products toward occupations which provide service to other organizations and the general public--occupations such as nursing, radiology, respiratory care, and physical and occupational therapy. Institutions offering these programs experienced large numbers of applicants for few vacancies. Currently, administrators, admissions officers, and faculty in institutions faced with a shortage of funding and student retention seek admissions criteria which will ensure the selection of

students who have the academic credentials needed to complete rigorous programs of study.

As selection committees of institutions began to seek methods for identifying qualified candidates for admission, many selected a standardized testing instrument such as the Scholastic Aptitude Test (SAT), the American College Test Assessment (ACT), or the College Level Academic Skills Test (CLAST). The use of standardized test scores as the sole indication of success has been criticized by potential applicants, college administrators, and faculty (Shahani, Dipboye, and Gehrlein, 1991; Roose, Mitchell, and Rudman, 1985). As further indication of the controversial nature of using standardized testing as a sole predictor of success in completing a program, Bauwens and Gerhard (1987) indicate that an objective instrument administered nationally is not available or currently recognized as a predictor of success. The results of an investigation at Miami-Dade Community College on the utilization of achievement test scores (CLAST) in predicting academic success indicate that standardized test results, if used as the sole predictor of successful completion of a program, may cause admission

committees to make mistakes in their admission decisions (Walsh, 1985). Safian-Rush and Belock caution admission committees to remember that success is not always measured by academic predictor tests as psychological maturity and discipline does not necessarily correlate with cognitive acumen which are critical to academic success.

Admission committees of some institutions rely upon an admission interview to predict academic success. A study conducted by Shahani, Dipboye, and Gehrlein (1991) attempted to validate the use of interviews in determining whether motivation and other attributes were given more weight than standardized test results in admissions decisions. This study was especially important due to the high cost to institutions of interviewing individual applicants for admission since findings suggest that "what little validity exists for interviewer judgments in this study may be attributable to the verbal ability of the applicant" (p. 1059). Since verbal ability of the applicant can be determined by standardized testing, application essays, or grades on communication classes, the researchers determined that the "interview was less

important than paper credentials . . . and the addition of the interview to the list of predictor variables added virtually nothing" (p. 1059). They also indicate that "if prediction of academic performance is the primary concern, SATs, grades, and systematic evaluation of paper credentials are far better bases for admissions than interviewer judgments" (p. 1060).

Some selection committees may require applicants to perform in a group setting tasks similar to those usually experienced on the job. One example is teacher educator programs. The selection committee's observation of these applicants as they perform these tasks enables committees to accurately predict successful completion of the program. These group tasks also provide applicants an opportunity to determine whether or not they will be satisfied in occupations which require the type of tasks experienced in the group settings.

> "The addition of these challenging activities to the selection process increases the amount of time and energy expended initially by the staff, but it has proved successful in reducing the amount of time and energy expended later by turning away

candidates who would not benefit from this . . . program" (Roose, Mitchell, and Rudman, 1985, p. 221).

The following studies indicate that academic success can be predicted more accurately using a variety of various combinations of variables. Previous success in education as indicated by grade point averages in combination with age can be utilized as criteria for predicting academic success (Friedmann & Valentine, 1988). Previous academic success as evidenced by grade point averages in addition to verbal ability measured by the SAT or other standardized testing instrument are also strong predictors of academic success (Wold & Worth, 1990). McClelland, Yang, and Glick (1992) found that grade point average in biology courses and pre-nursing grade point averages were the best predictors of success for nursing applicants. Kroll (1990) also indicate that prior academic success is an appropriate predictor of future academic success and that "patterns of D's in previous college course work may indicate a . . . student who is at risk" (p. 163) for noncompletion. Data analysis in a study conducted by Oliver (1985) supports the use of

high school ranking, biology, and English grades as having a "significant relationship with academic success" (p. 204).

The traumatic experience of the applicant who is rejected for admission to a program and the cost to the institution of selecting a non-successful applicant make it imperative that admission committees review their selection criteria to ensure that it is accurately predicting the potential for a successful academic experience.

This study was conducted in the radiologic technology department at East Tennessee State University to determine if existing criteria and procedures can accurately predict an applicant's potential for the successful completion of program requirements.

METHODS

The population consisted of 70 students admitted to the radiologic technology program: It was assumed this population would be representative of students admitted to programs elsewhere. Due to the lack of an instrument to measure or indicate successful completion of program requirements, an instrument developed by the

radiologic technology department at East Tennessee State University (see appendix A) was utilized. Each completed application was reviewed and ranked according to this standardized form. Areas of application evaluation were as follows: high school GPA or GED, course background in biology, chemistry, physics, algebra, all college course work, cumulative college GPA, collegiate curriculum specific course credit hours, and curriculum specific GPA. From this instrument, students were selected for the interviewing process. The interviewing process utilized a standardized evaluation of twenty questions designed by the radiologic technology department at East Tennessee State University (see appendix B). This tool was administered by the faculty of the radiologic technology program to each potential interviewee. The final academic ranking of the students completing the program had a median of 26.418 and a range of 65.335. The interview had a median of 26.838 and a range of 26.961.

DATA ANALYSIS

This study assumes there are equal intervals between ranking. Two tailed t-tests were used to calculate statistics.

Results

Seventy students were admitted to the program. Twenty-seven percent of the sample population did not complete the program. Proportional statistical testing indicates a standard error of .05, and a confidence interval of .16725 and .37560, ($z = .414$, $p < .68$). A probability level of .25 was utilized to detect any differences in variables. The T-tests (Table 1) indicate that the interview process was not a significant indicator. The final academic ranking was statistically significant, ($t = 1.28$, $p \leq .20$). Statistics were as follows:

Table 1

T-VALUES AND PROBABILITY

CATEGORIES	T-VALUE	PROBABILITY
ACADEMIC RANKING	1.28	.20
INTERVIEW RANKING	.28	.78

Data was analyzed using NCSS 5.3.

Discussion

Statistical analysis to determine significant variables which could predict success in completing the radiologic technology program, final academic ranking proved to be significant. The interview process proved to be of little value which is in agreement with a study conducted by Shahani, Dipboye, and Gehrlein (1991). The expenses incurred by the program, sixty-three dollars per interviewee is not validated by the study. Furthermore, since academic success, defined as graduation for the purposes of this study, prior academic performance is a better predictor than subjective parameters.

Conclusion

Final academic ranking was statistically significant at an alpha of .25. The interview process statistically was not significant even though a standardized interview form was utilized (see appendix B). Additional studies should be conducted to ascertain if other parameters, such as previous course work in biology, chemistry, physics, and algebra are significant indicators. A holistic study is also recommended which would incorporate different institutional locations in order to substantiate results.

REFERENCES

Bauwens, E. E., & Gerhard, G.G. (September, 1987). The use of the Watson-Glaser Critical Thinking Appraisal to predict success in a baccalaureate nursing program. Journal of Nursing Education, 26(7), 278-281.

Fridemann, M . L., & Valentine, S. (1988). Success in old and new licensure examinations: Pre-admission factors and academic performance. Research in Nursing & Health, 11, pp. 343-350.

Kroll, C. (1990). Registered nurse students: Academic admission and progression. The Journal of Continuing Education in Nursing, 21(4), 160-164.

McClelland, E., Yang, J. C., & Glick, O. J. (November-December, 1992). A statewide study of academic variables affecting performance of baccalaureate nursing graduates on licensure examination. Journal of Professional Nursing, 8(6), 342-350.

Oliver, D. K. (May, 1985). The relationship of selected admission criteria to the academic success of associate degree nursing students. Journal of Nursing Education, 24(5), 197-207.

Roose, D., Mitchell, S., & Rudman, M. K. (November, 1985). Selecting the brightest and the best. Phi Delta Kappan, 219-221.

Safian-Rush, D., & Belock, S. (February, 1988). Ethnicity, academic skills and nursing student achievement. Journal of Nursing Education, 27(2), 71-77.

Shahani, C., Dipboye, R. L., & Gehrlein, T. M. (1991). The incremental contribution of an interview to college admissions. Educational and Psychological Measurement, 51, 1049-1060.

Walsh, S. L. (1985). CLAST study results. In Planning and Analysis, Miami, FL: Florida International University, Division of Planning and Analysis.

Wold, J.E., & Worth, C. (February, 1990). Baccalaureate student nurse success prediction: A replication. Journal of Nursing Education, 29(2), 84-89.

EAST TENNESSEE STATE UNIVERSITY
RADIOLOGIC TECHNOLOGY PROGRAM - ADMITTANCE CRITERIA RANKING

	GED 56+ 5PTS 51-55 4PTS 45-50 3PTS 40-44 2PTS							
	3.5-4.0 5PTS 3.0-3.49 4PTS 2.5-2.99 3PTS 2.0-2.49 2PTS	A 4PTS B 3PTS C 2PTS D 1PT	A 4PTS B 3PTS C 2PTS D 1PT	A 4PTS B 3PTS C 2PTS D 1PT	A 4PTS B 3PTS C 2PTS D 1PT	30+ 6PTS 23-29 5PTS 18-22 4PTS 12-17 3PTS 6-11 2PTS 1-5 1PT	3.5-4 5PTS 3.0-3.49 4PTS 2.5-2.99 3PTS 2.0-2.49 2PTS	
NAME	H.S. GPA	BIOLOGY	CHEMTRY	PHYSICS	ALGEBRA	CDTS/APP	GPA CREDITS	TOTAL

SCORE: ___

EAST TENNESSEE STATE UNIVERSITY
STUDENT INTERVIEW FORM - RADIOLOGIC TECHNOLOGY PROGRAM

APPLICANT'S NAME: _____ DATE: _____ FACULTY MEMBER: _____

Utilize the following scale in order to rank applicants:

0 UNACCEPTABLE	1 POOR	2 INADEQUATE	3 BELOW AVERAGE
4 MARGINAL	5 AVERAGE	6 REMARKABLE	7 ABOVE AVERAGE
8 IMPRESSIVE	9 ADMIRABLE	10 EXCELLENT	

MATURITY

1. What deciding factors made you choose a career in radiologic technology? _____
2. What do you perceive the duties of a radiologic technologist to be? _____
3. What type of salary do you expect to earn after graduation? _____
4. Due to the nature of the radiologic technology program and the time dedication which is required, family support is often required. Do you have the support of your family? _____
5. Explain your degree of commitment in regards to completion of this program and in what ways may you achieve this goal. _____
6. How often do you miss class/work and why? _____

APPEARANCE

7. Observation of appearance: (Clean, neatness, poise, moderation). _____

MOTIVATION

8. What motivates you? Explain. _____

APTITUDE

9. What subject(s) do you like best? _____
10. Which subject(s) do you excel in and which ones do you not? _____
11. Why do you think you should be accepted into the radiologic technology program? _____

COMMUNICATION SKILLS

12. Briefly describe positive qualities about yourself. _____
13. What communication and interpersonal skills do you possess which will allow you to cope with sick, unresponsive, or abusive patients? _____
14. How do you react to constructive criticism? _____
15. Utilization of body language. _____
16. Verbalization ability. _____

PSYCHOMOTOR SKILLS

17. What hobbies or activities do you participate in? _____
18. Have you observed in a radiology department, if yes, how many hours? _____

RESPONSIBILITY

19. What is your greatest weekly responsibility? _____
20. Identify the greatest responsibility you have had. _____

INTERVIEWER COMMENTS: _____